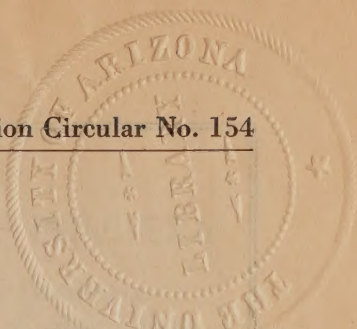


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Extension Circular No. 154



Common Diseases of Poultry

BY

B. F. KAUPP AND R. S. DEARSTYNE



FIG. 1. THIS RHODE ISLAND RED COCKEREL WITH SMALL LUMPS ON HIS FACE AND COMB HAS A BAD CASE OF SORE HEAD, ALSO CALLED CHICKEN POX.

NORTH CAROLINA
STATE COLLEGE OF AGRICULTURE AND ENGINEERING
AND
U. S. DEPARTMENT OF AGRICULTURE, CO-OPERATING
N. C. AGRICULTURAL EXTENSION SERVICE
I. O. SCHAUB, DIRECTOR
RALEIGH



HOW TO SEND BIRDS TO THE LABORATORY

Birds sent for disease examination should be addressed to the Poultry Department, State College, Raleigh, N. C.

These specimens should be shipped by prepaid express. It is better to ship several birds showing various stages of the disease. A letter containing a complete history of the outbreak also should be forwarded either prior to shipping or at the time shipment is made.

During the warm months birds should be sent so as to be on the road the shortest possible time and dead birds should be packed in ice.

Specimens should be shipped so they will not arrive on Saturday or Sunday.



COMMON DISEASES OF POULTRY

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In this circular no attempt is made to discuss all of the many diseases that may affect domesticated birds. Only those diseases are covered which appear to be of greatest importance as shown by inquiries to the Experiment Station and Extension Service workers and by classification of cases sent to the College for examination.

The Experiment Station maintains a poultry disease laboratory at State College in which the causes of poultry diseases are investigated and means of combatting them developed. Free examination of birds dying from disease, or in various stages of disease, are made for citizens of the State and reports of the findings are forwarded to them. Such work has its limitations and is confined to the identification of contagious diseases, unusual disease conditions and parasitic infestations. The causes of deaths caused by improper feeding, housing and care cannot with certainty be determined in the laboratory.

NORTH CAROLINA'S DISEASE PROBLEM

The poultry industry in North Carolina has become of great importance. The living conditions of poultry are such that infectious disease breaking out in a flock is liable to spread rapidly and a high mortality may ensue before the outbreak can be checked. Very often, due to the carelessness or indifference of the owner, sick birds are allowed to remain with the flock, having actual contact with other birds, eating from the same container, and drinking from a common drinking vessel, and thereby becoming a menace to the health of the entire flock.

Curative medicine, in many cases, has little place in poultry work. It does not pay due to the short span of life of the individual, to the low monetary value of each bird, to the time consumed in treatment, and finally because such treatment has a poor chance of success. The survivor is of little value.

MUST PREVENT DISEASE

If the poultry industry is to prosper measures must be taken to prevent diseases. These measures should be built around the following factors:

Healthy Stock: The breeding flock is the foundation on which flock-health is built. Healthy, vigorous, robust birds will produce the same type of offspring under normal conditions. Such chicks develop into vigorous birds which resist disease. The birds must be properly watered, fed, housed and cared for throughout the year if this health is to be maintained. If these things are not done the vitality of the birds is lowered and they will be more susceptible to disease.

Sanitation: The poultry flock must be kept under clean, sanitary conditions. Proper ventilations, light, protection from drafts, and general cleanliness are pertinent factors of disease prevention and spread. Drainage of the soil and the character of the soils are factors affecting the transmission of germ-borne disease and intestinal parasites. The droppings from infected or infested birds pollute the soil with germs and worm eggs and this pollution lives in the soil for an undetermined time. Healthy birds ranging on such soil readily contract the disease or the parasitic infestation. It is, therefore, desirable to rotate the poultry yards in order to allow nature to correct this condition. (See Extension circular on External and Internal Parasites.)

Isolation of Sick Birds: Every poultryman should immediately isolate all birds showing disease symptoms. Such birds can be placed in a small enclosure and fattened for market if they recover. Sick birds, suffering from an infectious disease, should never be returned to the flock because of the possibility of their being "carriers" of disease.

General Prevention of Disease: Disease is prevented mainly by the care exercised in the introduction of new blood into the flock. Such birds should be bought only on the sure knowledge that they are free from disease, come from a disease-free flock, and should be held for a week for observation before being allowed with the other birds. The systematic use of purgatives is also helpful in preventing disease and should be given at least once every three weeks at the rate of one-half pound of Epsom salts to each hundred birds. This may be given by dissolving the salts in the drinking water. Permanganate of

potash, one-half teaspoonful to the gallon of drinking water, is an excellent germicide and intestinal stimulant and should be used when roup, or intestinal diseases, are in the flock.

DISEASES OF CHICKS

The greatest loss of chicks is due to the carelessness or ignorance of the owner. Poor breeding stock produces weak chicks which readily die under adverse conditions. Variation of temperature, faulty ventilation or lack of ventilation, crowding, poor feeding, using soured and mouldy feed and other factors may cause the death of chicks. Care should be taken to distinguish death of chicks from these causes from that produced by germs. Practically all chick losses are accompanied by diarrhea, this usually being confused with the diarrhea caused by white diarrhea, a germ infection.

Simple Diarrhea: Simple diarrhea is usually due to chilling, overheating and crowding, putrid water, soured mash, weevily and spoilt feed. The house should always be kept at a high enough temperature, or between 90 and 98° F., for the first three weeks with a very gradual decline after that time but the house should not be kept hot. Improper living conditions, lack of detailed attention, and feeding factors usually result in heavy chick losses. Simple diarrhea should be treated with one-third teaspoonful catechu to the gallon of water or with the sulpho-phenol compounds or other effective tablets as Chol-Zen, containing a combination of useful drugs.

Bacillary White Diarrhea: This disease is caused by a microscopic germ.

Symptoms: The chicks are depressed, the feathers are ruffled, the birds appear droopy, lose their appetite, and there is a typical whitish to creamy brown discharge which usually pastes the vent. In acute cases there is a tendency for the abdomen or belly to swell. Post mortem examination usually shows a yellowish liver.

Treatment: There is no successful treatment for chicks infected with bacillary white diarrhea. Sour milk or buttermilk fed thirty-six hours after hatching is helpful in combatting intestinal diseases in general. Allow the chicks to feed heartily. Everything should be kept clean and sanitary. White diarrhea

is transmitted from infected breeding stock to chicks. The elimination of infected breeding stock may be obtained by a blood test. This test is conducted by the State Veterinarian's office on application. Confirmation of the disease in young chicks may be secured by sending dead chicks to the Poultry Pathological Laboratory at State College, Raleigh, N. C. This service is free.

Coccidiosis: This disease is transmitted by a single-celled organism and usually affects birds under four months of age. It is usually transmitted from infected soil and affects the cecal pouches and intestines.

Symptoms: The birds become droopy and the wings sag. Usually a large per cent of the infected flock show symptoms at the same time. The droppings are usually blood-red, which is important in diagnosing the case. The disease may be acute, the chicks dying in a few days, or it may become chronic, in which case the birds lose flesh and health.

Treatment and Prevention: Treatment is usually unsatisfactory; buttermilk or sour milk is helpful; change of range is necessary, and the new range should be rotated. Keep powdered catechu, one-third teaspoonful to the gallon of water, before the birds at all times. Feed Epsom salts in wet mash at the rate of one-half pound per hundred birds if adults and one teaspoonful to each one hundred chicks if the chicks are up to one pound in weight. Burn or bury the carcasses of birds dying from the disease.

DISEASES OF ADULTS

Among the important diseases of the head and the respiratory system are colds, pox, avian diphtheria, roup, bronchitis and broncho-pneumonia. The usual reason why these diseases occur in a flock is because of dampness and drafts. Proper housing and ventilation will do much to reduce their occurrence.

Pox (Sore Head): This disease is probably caused by a germ and is manifested by wart-like nodules on the face and head parts (see figure on cover page).

Treatment: Isolate infected birds; use one-half teaspoonful permanganate of potash to the gallon of drinking water; soften the scabs on the head with carbolated vaseline or roup-zen oil and

remove scabs after medicant has been applied twenty-four hours. Apply iodine to areas under scab.

Canker (Avian Diphtheria): This is an infection of the mouth parts, also probably caused by a germ. The disease is recognized by a cheesy growth on the inner membranes of the mouth (see Fig. 2).

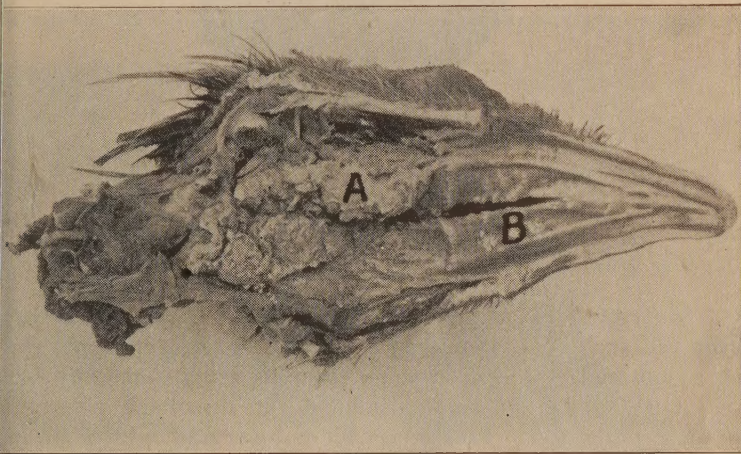


FIG. 2. THIS IS THE ROOF OF THE MOUTH SHOWING AT "B" THE SLIT IN THE ROOF OF THE MOUTH. THIS IS THE POSTERIOR NOSE OPENING. AT "A" IS SHOWN CANKER. THESE SORES ARE COVERED WITH A CHEESY MATERIAL AND ACCOMPANY ROUP.

Treatment: Isolate birds; remove the cheesy material by scraping with a knife; paint the surface of area with ten percent glycol or pure iodine. Repeat this treatment once a day until cured. For painting the part, a swab can be made by twisting a small piece of cotton around the end of a small stick. Dip this swab in pure iodine and then rub the sore.

Roup (Swelled Head): Roup is a disease which affects various portions of the breathing system according to the severity of the disease. It may be localized in the nose, the eyes (ocular roup) or become deeper seated (see Fig. 3). In severe cases all the breathing organs are affected. The exact cause of the disease is not known but is supposed to be a very small germ. Dampness and drafts are factors in its favor. Roup may be preceded by a cold.

Symptoms: The bird becomes droopy and depressed. There is a bad-smelling discharge from the nostrils. If localized in the

eyes there is a swelling of the eye. This has an offensive odor. The birds appear in a stupor, lack appetite, and, in the latter stage of the disease, the discharge dries and the eyelids are matted.

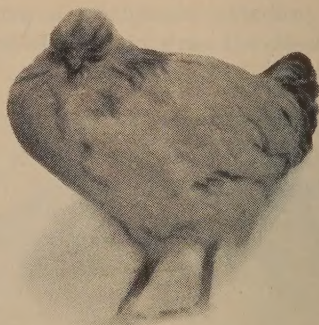


FIG. 3. THIS COLUMBIAN WYANDOTTE PULLET HAS ROUPY EYES. THE EYELIDS ARE GLUED SHUT AND THE EYES ARE BULGING WITH MATTER.

Treatment: In acute cases, the birds rarely respond to treatment and such birds should be destroyed. Isolate all birds showing symptoms of the disease and administer Epsom salts—one half pound to the one hundred adult birds, dissolving the salts in the drinking water. Press the eyelids open and with a piece of cotton remove the cheesy pus from eyes or from roof of mouth. Then treat with roup-zen oil, ten percent argyrol. Usually the response to treatment is slow.

Broncho-Pneumonia and Bronchitis: These diseases are deep-seated and extremely difficult to successfully treat. They are characterized by difficult breathing accompanied by a well-defined rattling. This condition often becomes chronic.

Treatment: Isolate all sick birds and administer Epsom salts. In the early stages of these diseases some success has been obtained by using acriflavine which is administered under the skin with a hypodermic syringe.

Avian Typhoid: (For details see Technical Bulletin 27 of the North Carolina Experiment Station.)

This disease is both widespread and destructive in North Carolina. It is caused by a germ, and is often confounded with chicken cholera, which is extremely rare in this State. Usually the disease is restricted to adults. The death rate is extremely high.

Symptoms: The birds become droopy and depressed (see fig. 4). In the initial stages there is a tendency for the bird to isolate itself from the rest of the flock. As the disease develops there is high fever and a sulphur-colored discharge from the vent. The face parts become pale. Prior to death the birds lie on the ground in a condition which might easily be mistaken for limberneck. The death rate is extremely high. Post mortem examination shows an enlarged, streaked liver and an enlarged spleen.

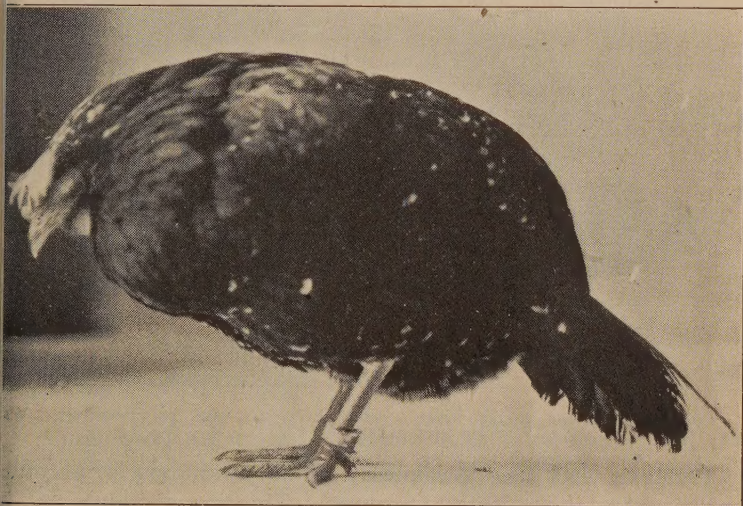


FIG. 4. THIS ANCONA HEN HAS A WELL-DEVELOPED CASE OF FOWL TYPHOID. EYES SHUT, HEAD AND TAIL DROOPY, AND IN A DROWSY STATE.

Treatment: Isolate all birds showing disease symptoms. Such birds should not be returned to the flock, but fattened and sold for recovery. Give Epsom salts to the flock, clean and disinfect the houses, and change the range if possible. This disease may be identified by sending birds to the Poultry Department at State College. If avian typhoid is confirmed vaccines will be made and issued free of charge. No vaccines will be issued unless confirmation is secured from the bird sent in. Vaccination can be done by a competent veterinarian, county agent or farm life school teacher.

Fowl Cholera: This disease is very similar to fowl typhoid, but more acute. At the present time, true fowl cholera is probably rare, if found at all, in North Carolina.

Symptoms: The symptoms are similar to those of fowl typhoid with the exception that in the acute stage the face part of the bird suffering from fowl cholera become darkened and the droppings are flaked with red.

Treatment: Vaccination does not usually produce good results in fowl cholera outbreaks. Birds should be isolated and a germicide, such as one-half teaspoonful permanganate to the gallon, placed in the drinking water. The houses should be thoroughly cleaned and disinfected. A change of range is desirable.



FIG. 5. AN ANCONA PULLET WITH A WELL DEVELOPED CASE OF PARALYSIS. WING DROOP AND SHE CANNOT STAND ON HER LEGS.

Paralysis and Leg Weakness: This condition is becoming more general in North Carolina. The exact cause is not known. Poor breeding stock, faulty incubation and brooding feeding, intestinal parasites, or an inherited tendency toward nervous disorders may be factors in this disease and also too much crowding of growing pullets after the brooder period and lack of proper living conditions.

Symptoms: The birds "go light," become weak in the legs and later practically lose control of the limbs. Usually a large percent of the flock go down at the same time.

Treatment: There is no treatment which has proven successful with this disease. Liberal feeding of green feed while the birds are chicks helps to ward off such condition. If green feed is not available the ration should be supplemented with cod liver oil at the rate of one percent of the mash ration, that is, one pound to each one hundred pounds of mash. The half-grown birds should be given Epsom salts at given intervals, every three

weeks, using one-half pound to each one hundred birds, dissolving the salts in the drinking water.

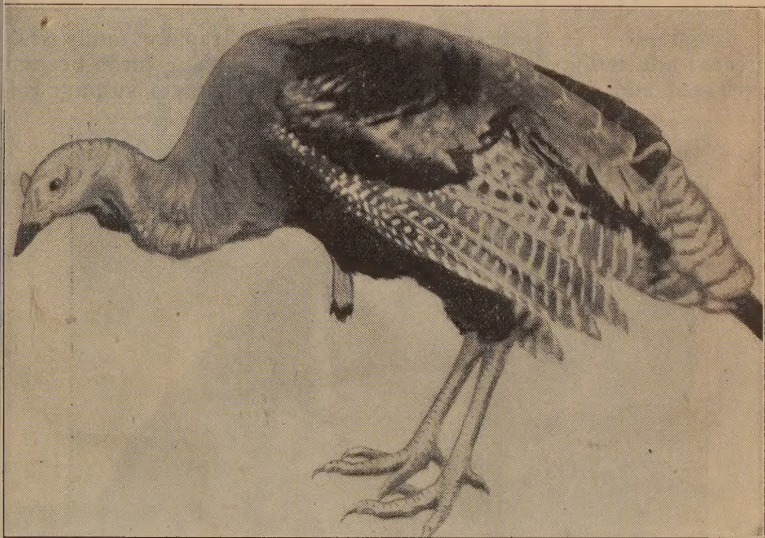


FIG. 6. THIS TURKEY IS AFFECTED WITH BLACK HEAD. WINGS, TAIL AND HEAD DROOPY. RAPIDLY BECOMING POOR IN FLESH.

Limberneck (Botulism): Limberneck is caused by the poison products secreted by a germ found in spoiled meat, rotten or green feed.

Symptoms: The disease usually manifests itself by a large number of cases appearing at the same time. The neck of the bird becomes limp, due to paralysis of the neck muscles. The comb and wattles are bright red and the feathers are easily pulled out. When the birds are picked up they utter a sharp cry of pain.

Post Mortem Examination: Constant post mortem conditions are not usually found, but in certain instances decayed feed stuffs or material may be found in the crop or gizzard.

Treatment: Birds do not readily respond to medicine but a serum (antibotulinus serum) gives good results. The cause should be sought and removed. This cause might be spoiled feed stuffs, either animal or vegetable matter, or the carcass of an animal. Maggots may carry the germs. Sick birds should be given Epsom salts at the rate of four teaspoonsful to the pint of water and castor oil, two teaspoonsful per bird.

Blackhead: This is a disease causing very heavy mortality among turkeys. It is caused by a single celled organism. The

name "blackhead" is not absolutely correct as the darkening of the head parts does not always accompany the disease. Although the disease particularly affects turkeys, young chickens four to six weeks old may develop it.

Symptoms: In young birds the disease is rapidly fatal, while infected adults may assume the chronic stage. The birds become depressed and droopy, the wings sag, and there is a sulphur-col-

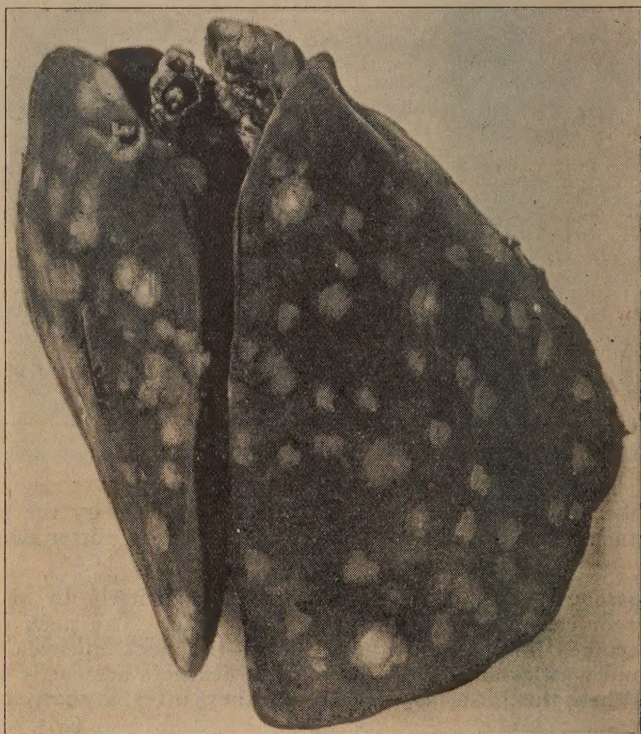


FIG. 7. THIS IS THE LIVER OF THE TURKEY SHOWN IN FIG. 6. THE SPOTS ARE DEAD LIVER TISSUE AND EXTEND THROUGH ALL PARTS OF THE LIVER.

ored discharge and a lack of appetite (see Fig. 6). Usually an outbreak is characterized by a number of birds being affected at the same time. When the bird is cut open the liver is seen to be covered with patches of dead liver tissue (see Fig. 7). The ceca or blind pouches are also thickened and diseased.

Treatment: There is no satisfactory treatment for blackhead. Sick birds should be segregated and the well birds removed to new range. The drinking water should be medicated. Care should be exercised in introducing new blood into flocks free from disease. Hatch and rear a new flock on new ground.